

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An on-line method of classifying IP addresses into related clusters within a distributed information network, the method comprising the steps of:

generating a unified prefix/netmask table from a plurality of network routing table prefix/netmask entries, said unified prefix/netmask entries comprising a plurality of IP addresses;

~~receiving a plurality of IP addresses;~~

processing the plurality of IP addresses according to a radix encoded trie classification process to determine a common prefix between at least a portion of the plurality of client IP addresses; and

grouping IP addresses which share a common prefix into a network client cluster.;

and

~~classifying the plurality of IP addresses into related clusters.~~

2. (Previously Presented) The method of claim 1, wherein the plurality of client IP addresses are received from one or more network routers.

3. (Original) The method of claim 1, wherein the IP addresses are network client IP addresses.

4. (Original) The method of claim 1, wherein the distributed information network is the World Wide Web.

5. (Currently Amended) A method for on-line grouping of a plurality of Web client IP addresses into related client clusters, the method comprising the steps of:

generating a unified prefix/netmask table from a plurality of network routing table prefix/netmask entries, extracting client IP addresses from each prefix/netmask entry in said plurality of network routing table prefix/netmask entries comprising a client IP address-a collection of IP addresses;

performing longest prefix matching on each client IP address; and

classifying all of the client IP addresses that have the same longest matched prefix into a client cluster based on a radix encoded trie matching process.

6. (Previously Presented) The method of claim 5, wherein the client IP addresses are extracted in real time from a network server.

7. (Previously Presented) The method of claim 5, wherein the distributed information network is the Internet.

8. (Currently Amended) A method for determining the relationships between a plurality of IP addresses in a unified prefix/netmask table, the method comprising:

processing the plurality of IP addresses according to a radix encoding trie (retrieve) process to determine a common prefix between at least a portion of the plurality of IP addresses, said plurality of a IP addresses; and

grouping all of the IP addresses which share a common longest prefix matching into at least one IP grouping.

9. (Previously Presented) The method of claim 8 , further comprising:
receiving the plurality of IP addresses from one or more network servers.

10. (Previously Presented) The method of claim 9, wherein the network servers are at least one of proxy servers, cache servers, content distribution servers and mirror servers.

11. (Previously Presented) The method of claim 8, wherein at least one address in said plurality of IP addresses is a client IP address.

12. (Previously Presented) The method of claim 8, wherein at least one address in said plurality of IP addresses is a server IP address.

13. (Original) The method of claim 8, wherein the retrieve includes shift, mask values which are combined into a single value in a predecessor table.

14. (Original) The method of claim 8, wherein the elements in a last retrieve table level contain only a next hop index so as to decrease the retrieve table size.

15. (Original) The method of claim 8, wherein the retrieve includes a fixed number of retrieve levels.

16. (Original) The method of claim 8, wherein the number of retrieve levels is fixed at two levels.

17. (Currently Amended) A computer-readable medium containing executable instructions which cause a computer to perform the steps of:

generating a unified prefix/netmask table from a plurality of network routing table prefix/netmask entries, each prefix/netmask entry in said plurality of network routing table prefix/netmask entries comprising at least one IP address;

performing longest prefix matching using a radix encoded trie matching process on at least one IP address; and

classifying said at least one IP addresses that have the same longest matched prefix into a client cluster.

~~extracting at least one IP address;~~

~~performing longest prefix matching on the at least one IP address; and~~

~~classifying the at least one IP address into a cluster, wherein the longest prefix matching is performed according to a radix encoded trie.~~

18. (Original) The computer-readable medium of claim 17, wherein the at least one IP address is a client IP address.

19. (Original) The computer-readable medium of claim 17, wherein the at least one IP address is a server IP address, wherein the cluster is a server cluster.

20. (Original) The computer-readable medium of claim 17, wherein the radix encoded trie is described by the equation:

$$\text{while}(! ((r=r \rightarrow \text{tablel}(x \gg r \rightarrow \text{shift}) \& r \rightarrow \text{mask}) \& 1))$$

where x is the search key and r is the radix encode trie.